Terrorism Awareness
for
First Responders in Ontario: Self-Study

Office of the Fire Marshal
Ministry of the Solicitor General
Ontario, Canada

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U.S. Department of Justice
Office of Justice Programs – Bureau of Justice Assistance
Federal Emergency Management Agency
United States Fire Administration – National Fire Academy

(It has been modified by the Office of the Fire Marshal for participants, in Ontario, Canada)

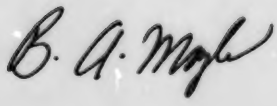
Foreword

In light of the recently heightened concerns for public safety as a result of acts and threats of terrorism, the Office of the Fire Marshal, in consultation with its stakeholders, has prepared this self-study course as an introduction to the basic concepts for first responders (fire, police and ambulance) at the scene of a potential terrorist incident.

This course is based on an existing course prepared by the U.S. Department of Justice, Federal Emergency Management Agency, and is delivered through the National Fire Academy. It has been modified with permission, for delivery in Ontario.

We gratefully acknowledge the following stakeholders, who were consulted in the development of this course:

- Centre of Forensic Sciences
- Emergency Management Ontario
- Ministry of Health and Long-Term Care, Emergency Services Branch
- Municipal Fire Services Instructors Association
- Municipal Health and Safety Association
- Ontario Association of Fire Chiefs
- Ontario Provincial Police
- Windsor Fire Department



Bernard A. Moyle
Fire Marshal of Ontario

Table of Contents

PAGE

Foreword 1
Table of Contents 2
The Importance of This Training 3
Course Overview 3
Target Audience 4
How to Complete This Course 4
Safety, The Most Important Issue 5
Module 1:
Terrorism in Perspective 7
Module 2:
Incidents and Indicators 26
Module 3:
Self-Protection 38
Module 4:
Scene Assessment and Control 51
Module 5:
Notification and Co-ordination 65
Glossary 74
Bibliography 83
Answer Keys to Learning Checks 85
Appendix A: Application for Certificate of Completion 88

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The Importance of This Training

You are one of the first to arrive on the scene of a suspected terrorist incident. As a first responder trained at the awareness level, you are among the first to witness or discover an incident involving criminal activity or terrorism and to initiate an emergency response sequence by notifying the proper authorities. In this role you need the following competencies, which you can acquire through training and professional experience:

- an understanding of what terrorism is and the risks associated with such an incident;
- an understanding of the potential outcomes associated with a terrorist incident;
- the ability to recognize the presence of, and identify, criminal activity or terrorism in an emergency;
- an understanding of the role of the first responder as it relates to components of an emergency plan, including site security and the 2000 Emergency Response Guidebook (ERG);
- the ability to realize the need for additional resources, and to make appropriate notifications to an emergency communication centre; and
- the ability to self-protect, keeping responder safety as a priority.

Course Overview

The purpose of this course is to provide participants with a general introduction to the basic concepts for first responder awareness at the scene of a potential terrorist incident. This course consists of five self-study modules, a Glossary, a Bibliography and an Appendix.

Participants who complete this self-study course and submit the required application form will receive a Certificate of Completion (See Appendix "A").

Module 1: Terrorism In Perspective defines terrorism, presents a historical perspective, and provides an overview of potential threats (biological, nuclear, incendiary, chemical, and explosive).

Module 2: Incidents and Indicators identifies criteria for recognizing suspicious incidents; presents on scene key indicators, including those for locating terrorist incidents; and lists outward warning signs and detection clues.

Module 3: Self-Protection includes the types of potential harm encountered at the scene of an incident, and means of protection.

Module 4: Scene Assessment and Control describes initial response and arrival considerations and the appropriate course of action for scene isolation and evacuation.

Module 5: Notification and Co-ordination provides procedures for activating response resources.

The **Glossary**, located at the end of the final module, contains definitions of terms related to first responder awareness responsibilities and operations.

A **Bibliography** is included to help you continue learning after you have completed the course. This consists of a list of references that may be helpful in learning about emergency response to terrorism.

Target Audience

The primary target audience for this course includes four groups of people, ideally trained to the awareness level in hazardous materials response:

- fire service personnel
- emergency medical service responders
- hazardous materials responders
- law enforcement personnel
- in addition, this course also is designed to benefit
  - emergency communications personnel
  - municipal emergency co-ordinators
  - emergency management personnel
  - public health workers
  - security personnel

How to Complete This Course

Just a few suggestions to help you gain more from your self-study learning experience. You will benefit most if you do not rush through this course. Do not try to read it cover-to-cover in one sitting. Throughout the text the authors have inserted questions that encourage you to stop reading, reflect a bit on what you have read, and apply it to your local situation.

These questions are called, "*Thinking About My Situation...*" You may not be able to answer all of the questions completely, but the more you reflect on them and try to find answers, the more valuable the learning experience will be. Some of the questions encourage you to go beyond the text and find information in other sources. The questions are designed to apply the module objectives to your local situation.

At the end of each module is a final learning activity: "*What I Will Do As Follow-up To This Module...*" asking you to apply what you have just learned to your local situation. If used correctly, these final questions could be the springboard to some very worthwhile post-course action steps for you and your department.

After you finish reading the module and answer as many of the reflection questions as possible, you can complete the corresponding learning checks, and review the answers provided to assure that you have mastered the content.

The learning checks will help you evaluate your mastery of the material. If you are unable to answer all of the questions correctly, you may want to read the corresponding materials again.

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Safety, The Most Important Issue

As a first responder, safety is your most important concern. You must protect yourself so that you can protect your fellow responders and the public. If you do not arrive safely at the incident scene, or if you become injured or incapacitated in any way, you will not be able to provide the services required by the initial call for help. We need to examine some of the pertinent issues of scene control, keeping your safety and survival in mind. The use of personal protective equipment (PPE) coupled with positive pressure self-contained breathing apparatus (SCBA) will greatly increase your safety.

All emergency operations must be organized to be successful. Remember that the initial actions taken by the first responders will affect the final outcome of the incident. Besides, an organized and well-managed incident creates a safer environment for all involved. One of the best ways to understand the nature of organization is to view it from a systems approach. A system is a unit of interrelated, dependent parts or functions designed to achieve a common goal.

A good example is the human body. The body's systems – sensory, nervous, muscular, circulatory, reproductive and skeletal – all play a role in sustaining life. If the systems are not properly interrelated and fail to function as one organism, life is threatened. Similarly, if the emergency scene is not properly managed, the potential for loss of scene control exists. Not only is scene control lost, there could be other consequences resulting in greater loss of life or injury. Therefore, the use of an integrated systems approach, such as incident command, is critical to the outcome of the incident.

If you suspect a chemical, biological, or nuclear incident, this text does not provide you with the necessary training to completely protect yourself. Your principal responsibility in this instance is to call those responders who have the appropriate training and equipment.

Module 1
Terrorism in Perspective

Objectives

After completing this Module, you will be able to:

- define terrorism, and recognize the chief characteristics of terrorist activities;
- recognize attack vulnerability factors; and
- identify chief characteristics of the five categories of potential terrorist threats.

The Threat Is Real

Terrorists have the knowledge and the capability to strike anywhere in the world. We have seen that when properly motivated they will do whatever they have to do in order to achieve their goals. Recent examples of terrorist attacks include the distribution of anthrax in the U.S. Mail System, 2001, the World Trade Center/Pentagon attacks, September 11, 2001, the bombing of the Murrah Building, Oklahoma City, April, 1995, and the World Trade Center bombing, February 1993. There have been smaller bombing incidents, not necessarily classed as terrorist events, at the 1996 Olympics, at family planning clinics, and, recently, at social clubs. The list most likely will continue to grow.

All communities--especially those in free societies--are vulnerable to incidents involving terrorism. Nearly all of these communities contain some high-visibility target. These targets usually are situated along routes with high transportation and access potential. Many may have manufacturing and testing facilities. Other examples of locations that may become targets for criminal or terrorist activity include:

- public assembly
- public buildings
- mass transit systems
- places with high economic impact
- telecommunications facilities
- places with historical or symbolic significance

Despite our security consciousness, if terrorists intend to wreak havoc it will be difficult to stop them.

An act of terrorism can occur anywhere, at any minute, when you would least expect it. No jurisdiction, urban, suburban, or rural, is totally immune.

What Is Terrorism?

The House of Commons is currently debating draft legislation which may define terrorism upon proclamation.

According to the Federal Bureau of Investigation (FBI) the definition of terrorism is "the unlawful use of force against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in the furtherance of political or social objectives." This definition includes three elements:

1. Terrorist activities are illegal and involve the use of force.
2. The actions intend to intimidate or coerce.
3. The actions are committed in support of political or social objectives.

In one sense, it makes no difference to a first responder whether the incident is a terrorist act or not. You still will respond and be among the first on the scene. Naturally, the size and the kind of terrorist action are key factors. But the important point to note is that an act of terrorism is essentially different from normal emergencies. You will have to deal with a new set of circumstances far different from the structural fire, the auto wreck, even the hazardous materials incident.

What Is A Threat?

One way to look at it is to see threat as consisting of two elements: motive and ability. In one sense, determining the threat is a law enforcement function. On a more practical level, emergency responders need to realize that any individual or group that has both the motive and the ability can perpetrate an act of terrorism. There are many groups that possess both the motive and the ability; the law enforcement community monitors these groups constantly to assess the level of threat.

The criminal component is the most important element separating a terrorist organization and its actions from a legitimate organization. However, any organization, legitimate or not, can resort to terrorist means to achieve its political or social agenda. We also need to remember that a terrorist can act alone.

What makes the terrorist event so dangerous is that it is intended to cause damage, to inflict harm, and in some cases to kill. The fire that starts in someone's home as a result of careless smoking was probably not set with the intention to damage, hurt, or kill. There are exceptions, of course, as in the case of arson, but normally most of the incidents you will respond to are not criminal in nature. Terrorists will go to great

lengths to make sure the event has the intended impact, even if it means destroying a whole building and killing all of its occupants.

Recent bombing incidents have shown that there can be a sequence of events carefully timed to inflict further harm on those whose job it is to respond to assist others. This shows the depth to which terrorists can descend to achieve their ends. Some additional hazards will include

- armed resistance
- use of weapons
- booby traps
- secondary events

Experts generally agree that there are five categories of terrorist incidents. We need to take a brief look at the five: biological, nuclear, incendiary, chemical, and explosive. The acronym B-NICE is a simple way to remember the five.

As we discuss these incidents, it is important to remember the four routes of entry: inhalation, absorption, ingestion, and injection. As with other incidents, responders should exercise good judgment in using personal protective equipment (PPE) and training provided to them. The use of protective clothing, including positive-pressure, self-contained breathing apparatus, will enhance your chances of safe and successful response especially in situations where you may face secondary contamination.

An Overview

1. **Biological Incidents.** Several biological agents can be adapted and used as terrorist weapons. These include anthrax (sometimes found in sheep), tularemia (or rabbit fever), cholera, encephalitis, the plague (sometimes found in prairie dog colonies), and botulism (found in improperly canned food).

Thinking About My Situation...

As one involved in emergency services, you already may have responded to a terrorist incident. If you have, what were your key concerns or worries as you responded to the uncertainties of the situation?

_____
_____
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_____

In retrospect, do you think your anxiety level was higher than in the more customary responses such as to a house fire, a vehicle accident or even a hazardous materials incident? Why or why not?

_____
_____
_____
_____

If you have never been associated with a terrorist incident, what would be some of your anxieties or concerns as an emergency services provider in dealing with a situation like this?

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_____
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_____

Biological agents pose very serious threats given their fairly accessible nature, and the potential for their rapid spread. The potential for devastating casualties is high in a biological incident. Individuals can be exposed to biological agents in the following ways:

- inhalation – use of aerosols (spray devices)
- ingestion – food or water contamination
- absorption through skin (direct contact with the material)
- injection (puncture through skin surface).

There are four common types of biological agents: bacteria, viruses, rickettsia, and toxins.

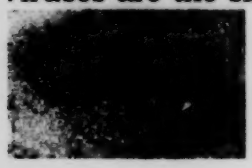
Bacteria and Rickettsia

Bacteria are single-celled organisms that multiply by cell division and can cause disease in humans, plants, or animals. Although true cells, rickettsia are smaller than bacteria and live inside individual host cells. Examples of bacteria include anthrax (bacillus anthracis), cholera (Vibrio cholerae), plague (Yersinia pestis), tularemia (Francisella tularensis); an example of rickettsia is Q fever (coxiella burnetii).

You may be familiar with the disease anthrax, associated with cattle, sheep, and horses serving as hosts. Handling of contaminated hair, wool, hides, flesh, or other animal substances can lead to contracting cutaneous (dermal) anthrax. However, the purposeful dissemination of spores in aerosol, such as for terroristic purposes, is another way people could contract it and cause a more dangerous form of the disease.

Virus

Viruses are the simplest type of microorganisms. They lack a system for their own metabolism and therefore depend upon living cells to multiply. This means that a virus will not live long outside of a host.



Types of viruses that could serve as biological agents include smallpox, Venezuelan equine encephalitis, and the viral hemorrhagic fevers such as the Ebola and Marburg viruses, and Lassa fever.

Toxins

Toxins are toxic substances of natural origin produced by an animal, plant, or microbe. They differ from chemical agents in that they are not human made and typically they are much more complex materials. Toxins, in several cases, are easily extracted for use as a terrorist weapon, and, by weight, usually are more toxic than many chemical agents.

The four common toxins thought of as potential biological agents are botulism (botulinum), SEB (staphylococcal enterotoxin B), ricin, and mycotoxins.

Ricin is a toxin derived from the castor bean plant, available worldwide. There have been several documented cases involving ricin throughout the U.S., particularly in rural areas.

Castor Bean Plant

Routes of Exposure

The primary routes of exposure for biological agents are inhalation and ingestion. Skin absorption and injection also are potential routes of entry, but are less likely.

Thinking About My Situation...

Suggest some consequences for emergency services responders if it were suddenly realized that terrorists had contaminated the public water supply.

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_____
_____

Does your department or organization have procedures/ guidelines to deal with a potential biological incident?

[ ] Yes [ ] No

If not, what would you do?

_____
_____
_____

2. **Nuclear/Radiological Incidents.** There are two fundamentally different threats in the area of nuclear terrorism. One is the use, threatened use, or threatened detonation, of a nuclear bomb. The other is the detonation, or threatened detonation, of a conventional explosive incorporating nuclear materials (radiological dispersal devices or RDD). It is unlikely that any terrorist organization could acquire or build a nuclear device, or acquire and use a fully functional nuclear weapon.

The number of nations with nuclear capability is small, and each places a high priority on the control of its nuclear weapons. Even if a nation supporting terrorism could develop a nuclear capability, experts believe it would be implausible for that nation to turn a completed weapon over to a group that might use it against them. The theft of a completed nuclear weapon also is unlikely. All nuclear nations have placed their nuclear arsenals under the highest security. All Western and former Soviet nuclear weapons are protected with a Permissible Action Link (PAL) -

system that renders the weapon harmless until the proper code is entered.

The greatest potential terrorist threat for a nuclear weapon would be to use such a device as a form of extortion. The U.S. government has plans to meet such a threatened use. Presently, there is no known instance of any non-governmental group close to obtaining or producing a nuclear weapon.

The purpose of an attack where nuclear materials are incorporated into a conventional explosive (RDD) would be to spread radioactive materials around the bombsite. This would disrupt normal, day-to-day activities, and would raise the level of concern among first responders regarding long-term health issues. It would prove to be difficult to perform complete environmental decontamination.

Another possible scenario involving nuclear materials would be the detonation of a large device, such as a truck bomb (large vehicle with high quantities of explosives), in the vicinity of a nuclear power plant or a radiological cargo in transport. Such an attack could have widespread effects. The frequency of shipments of radiological materials is increasing throughout the world.

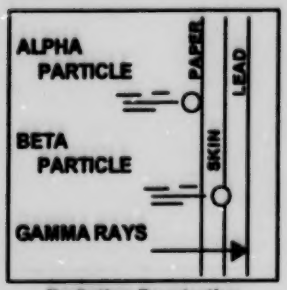
There are three main types of nuclear radiation emitted from radioactive materials: alpha, beta, and gamma radiation.

Alpha particles are the heaviest and most highly charged of the nuclear particles. However, alpha particles cannot travel more than a few inches in air and are completely stopped by an ordinary sheet of paper. The outermost layer of dead skin that covers the body can stop even the most energetic alpha particle. However, if ingested through eating, drinking, or breathing contaminated materials, they can become an internal hazard.

Beta particles are smaller and travel much faster than alpha particles. Typical beta particles can travel several millimeters through tissue, but they generally do not penetrate far enough to reach the vital inner organs. Exposure to beta particles from outside the body is normally thought of as a slight hazard.

However, if the skin is exposed to large amounts of beta radiation for long periods of time, skin burns may result. If removed from the skin shortly after exposure, beta-emitting materials will not cause serious burns. Like alpha particles, beta particles are considered to be an internal hazard if taken into the body by eating, drinking, or breathing contaminated materials. Beta-emitting contamination also can enter the body through unprotected open wounds.

Gamma rays are a type of electromagnetic radiation transmitted through space in the form of waves.



Radiation Penetration

Gamma rays are pure energy and therefore are the most penetrating type of radiation. They can travel great distances and can penetrate most materials. This creates a problem for humans, because gamma rays can attack all tissues and organs.

Gamma radiation has very distinctive, short-term symptoms. Acute radiation sickness occurs when an individual is exposed to a large amount of radiation within a short period of time.

Symptoms of acute radiation sickness include skin irritation, nausea, vomiting, high fever, hair loss, and dermal burns. Later in this course, countermeasures for these three hazards will be discussed.

Thinking About My Situation...

To whom would you turn in your community for help (such as monitoring training) in becoming better prepared to handle a radiological threat?

_____

_____

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3. **Incendiary Incidents**. An incendiary device is any mechanical, electrical, or chemical device used intentionally to initiate combustion and start a fire. A delay mechanism consists of chemical, electrical, or mechanical elements. These elements may be used singly or in combinations. Incendiary materials are materials that burn with a hot flame for a designated period of time. Their purpose is to set fire to other materials or structures.

Incendiary devices may be simple or elaborate and come in all shapes and sizes. The type of device is limited only by the terrorist's imagination and ingenuity. An incendiary device can be a simple match applied to a piece of paper, or a matchbook-and-cigarette arrangement, or a complicated self-igniting chemical device. Normally, an incendiary device is a material or mixture of materials designed to produce enough heat and flame to

cause combustible material to burn once it reaches its ignition temperature.

Each device consists of three basic components: an igniter or fuse, a container or body, and an incendiary material or filler. The container can be glass, metal, plastic, or paper, depending on its desired use. A device containing chemical materials usually will be in a metal or other non-breakable container. An incendiary device that uses a liquid accelerator usually will be in a breakable container, e.g., glass. Generally, crime scene investigators find three types of incendiary devices: electrical, mechanical, or chemical. These may be used singularly or in combinations.

Only specially trained personnel should handle incendiary devices discovered prior to ignition. Handling of such devices by inexperienced individuals can result in ignition and possible injury or death. In addition, proper handling is critical for crime scene preservation.

4. **Chemical Incidents.** Chemical agents fall into five classes:

- Nerve agents, which disrupt nerve impulse transmissions.

- Blister agents, also called vesicants, which cause severe burns to eyes, skin, and tissues of the respiratory tract.
- Blood agents, which interfere with the ability of blood to transport oxygen.
- Choking agents, which severely stress respiratory system tissues.
- Irritating agents, which cause respiratory distress and tearing designed to incapacitate. They also can cause intense pain to the skin, especially in moist areas of the body. They are often called Riot Control Agents.

Thinking About My Situation...

Does your department or organization have procedures/guidelines for responding to an incendiary incident?

[ ] Yes [ ] No

Has your department been trained to recognize and identify the signs of incendiary fires? [ ] Yes [ ] No

How would your approach to this kind of incident differ from your approach to a more typical incident (house fire or vehicle accident)?

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_____

Nerve Agents

Nerve agents are similar in nature to organophosphate pesticides, but with a higher degree of toxicity. All are toxic at small concentrations (a small drop could be fatal). The agents include sarin (GB) used by terrorists against Japanese civilians and by the Iraqis against Iran; Soman (GD); tabun (GA); and V agent (VX). These materials are liquids that typically are sprayed as an aerosol for dissemination. In the case of GA, GB, and GD, the first letter "G" refers to the country (Germany) that developed the agent, and the second letter indicates the order of development. In the case of VX, the "V" stands for "venom" while the "X" represents one of the chemicals in the specific compound.

The victims' symptoms will be an early outward warning sign of the use of nerve agents. There are various generic symptoms similar to organophosphate poisoning. The victims will salivate, lacrimate, urinate, and deficate without much control.

Other symptoms may include

- eyes: pinpointed pupils, dimmed and blurred vision, pain aggravated by sunlight;
- skin: excessive sweating and fine muscle tremors;
- muscles: involuntary twitching and contractions;
- respiratory system: runny nose and nasal congestion, chest pressure and congestion, coughing and difficulty in breathing;
- digestive system: excessive salivation, abdominal pain, nausea and vomiting, involuntary defecation and urination; and

- nervous system: giddiness, anxiety, difficulty in thinking and sleeping (nightmares).

Nerve agents resemble water or light oil in pure form and possess no odour. The most efficient distribution is as an aerosol. Small explosions and equipment to generate mists (spray devices) may be present. Nerve agents kill insect life, birds, and other animals as well as humans. Many dead animals at the scene of an incident may be another outward warning sign or detection clue.

Blister Agents

Blister agents are also referred to as mustard agents due to their characteristic smell. They are similar in nature to other corrosive materials first responders encounter. They readily penetrate layers of clothing and are quickly absorbed into the skin. Mustard (H, HD), and lewisite (L) are common blister agents. All are very toxic, although much less so than nerve agents. A few drops on the skin can cause severe injury, and three grams absorbed through the skin can be fatal. Clinical symptoms may not appear for hours or days. The symptoms of blister agents include:

- eyes: reddening, congestion, tearing, burning, and a "gritty" feeling; in severe cases, swelling of the eyelids, severe pain, and spasm of the eyelids;
- skin: within 1 to 12 hours, initial mild itching followed by redness, tenderness, and burring pain, followed by burns and fluid-filled blisters. The effects are enhanced in the warm, moist areas of the groin and armpits;
- respiratory system: within 2 to 12 hours, burning sensation in the nose and throat, hoarseness, profusely running nose, severe cough, and shortness of breath; and
- digestive system: within two to three hours, abdominal pain, nausea, blood-stained vomiting, and bloody diarrhea.

Blister agents are heavy, oily liquids, dispersed by aerosol or vaporization, so small explosions or spray equipment may be present. In a pure state they are nearly colourless and odourless, but slight impurities give them a dark colour and an odour suggesting mustard, garlic, or onions. Outward signs of blister agents include complaints of eye and respiratory irritation along with reports of a garlic-like odour. Similar symptoms will occur among many individuals exposed.

Blood Agents

Blood agents interfere with the ability of the blood to transport oxygen, and result in asphyxiation. Common blood agents include hydrogen cyanide (AC) and cyanogen chloride (CK). Cyanide and cyanide compounds are common industrial chemicals with which emergency responders sometimes deal. CK can cause tearing of the eyes and irritate the lungs. All blood agents are toxic at high concentrations and lead to rapid death. Affected persons require removal to fresh air and respiratory therapy. Clinical symptoms of patients affected by blood agents include

- respiratory distress;
- vomiting and diarrhea; and
- vertigo and headaches.

Under pressure, blood agents are liquids. In pure form, they are gases. Precursor chemicals are typically cyanide salts and acids. All have the aroma of bitter almonds or peach blossoms. They are common industrial chemicals and are readily available.

Choking Agents

Choking agents stress the respiratory tract. Severe distress causes pulmonary edema (fluid in the lungs), which can result in asphyxiation resembling drowning. Chlorine and phosgene, common industrial chemicals, are choking agents. Clinical symptoms include severe eye irritation and respiratory distress (coughing and choking). Most people recognize the odour of chlorine. Phosgene has the odour of newly cut hay. As both are gases, they must be stored and transported in bottles or cylinders.

Irritating Agents

Irritating agents, also known as riot control agents or tear gas, are designed to incapacitate. Generally, they are nonlethal; however, they can result in asphyxiation under certain circumstances. Common irritating agents include chloropicrin, MACE (CN), tear gas (CS), capsicum/pepper spray, and dibenzoxazepine (CR). Clinical symptoms include:

- eyes and throat: burning or irritation; tearing of the eyes;
- respiratory system: respiratory distress, coughing, choking, and difficulty breathing; and

- digestive system: high concentrations may lead to nausea and vomiting.

These agents can cause pain, sometimes severe, on the skin, especially in moist areas. Most exposed persons report the odour of pepper or of tear gas. Outward warning signs include the odour of these agents and the presence of dispensing devices. Many are available over the counter.

The primary routes of exposure for chemical agents are inhalation, ingestion, and skin absorption/contact. Injection is a potential source of entry, but is less likely. With the exception of blister agents, inhalation is the primary route of exposure for chemical agents. However, skin absorption/contact with irritant nerve agents and blister agents also is a highly possible route of exposure.

Thinking About My Situation...

Does your department or organization have procedures/guidelines for responding to a chemical incident?

[ ] Yes [ ] No

What would be your specific role if you had to respond to a chemical threat?

_____

_____

_____

How would your approach to this incident and your approach to a more typical incident differ?

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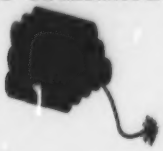
The last category of potential terrorist incidents we need to examine briefly is the explosive incident.

5. **Explosive Incidents**. Transport Canada (CANUTE) defines explosives as products or substances that:

- are capable by self-sustaining chemical reaction, of producing gas at such temperature, pressure and speed as to damage the surroundings or
- are manufactured for the purpose of producing a practical explosive or pyrotechnic effect.

It is estimated that 70 percent of all terrorist attacks worldwide involve explosives. It is apparent that bombs are the current weapon of choice amongst terrorist groups. In the United States of America, the FBI reports that of 3,163 bombing incidents in 1994, 77 percent were due to explosives. In these situations 78 percent of all bombs detonated or ignited. Another 22 percent failed to function as designed; only 4 percent were preceded by a warning or threat.



The FBI also noted three other interesting facts:

- When public safety agencies know of the presence of a device, they have only a 20 percent chance of finding it.
- Hundreds more "hoax" bomb incidents are reported each year.
- Residential properties are the most common targets for bombers.

The conclusion is that improvised explosive and incendiary devices are designed and assembled to explode and cause fires. Explosions rapidly release gas and heat, affecting both structures and people. Bombings are the types of terrorist attacks most likely to be encountered. Bombs nearly always work as designed. An important point to remember is that explosions can cause fires, and fires can cause explosions. First responders should always be aware of the potential for secondary devices.

The five types of incidents previously discussed are similar, in some respects, to routine emergencies. Responders still can protect themselves using sound judgment and the basic equipment they are trained to use.

Summary

Today, emergency responders and others in emergency services who support them face new challenges that seriously imperil not only the public but those very persons whose job it is to protect and help the public. The risks faced in today's world pose threats for which the average emergency responder may not be prepared. These threats go far

beyond the usual ones associated with residential fires, vehicular accidents, or even hazardous materials incidents.

It is critical that emergency responders understand the implications of these modern threats and know proper response procedures and the limits of safe and prudent response. This knowledge will help prevent further fatalities. Responders need to translate this knowledge into departmental procedures/guidelines written to make safety the paramount consideration. Injured or incapacitated responders are no help to anyone.

The emergency services community has tremendous knowledge and resources available from the Federal and Provincial governments, military, public health, and law enforcement agencies, to name some of the more obvious. These resources can be a great help in writing prudent and safe procedures and guidelines.

Thinking About My Situation...

Some Federal and Provincial and other agencies in your area to which you might turn for assistance in preparing procedures/guidelines for the events discussed in this module.

_____

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_____

How different would these procedures/guidelines be from existing ones for the more usual and customary emergencies?

_____

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_____

If any one of the incidents discussed in this module happened tomorrow, are you and your emergency services colleagues sufficiently prepared to deal with it?

[ ] Yes [ ] No

What are some of the implications of your state of readiness?

_____

_____

_____

What I Will Do As Follow-up To This Module...

Describe one or two practical, achievable steps you will take as a result of studying this module to help you to be better prepared to deal with one of the incidents described here.

Step One:

Step Two:

How I will accomplish Step One?

How I will accomplish Step Two?

Learning Check

True or False: Circle either T or F.

1. T F The Federal Bureau of Investigation defines terrorism as "the unlawful use of force against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in the furtherance of political or social objectives."

2. T F Nerve agents are similar in nature to organophosphate pesticides.

3. T F The criminal component is the **least** important element separating a terrorist organization and its actions from a legitimate organization.

4. T F Experts generally agree that there are five categories of terrorist incidents.

5. T F Alpha radiation is the most penetrating kind.

6. T F The intent to intimidate or coerce people through random acts of violence is a characteristic of terrorist activities.

Multiple Choice: Circle your answer.

7. Of the following targets, which one would probably be the least appealing to a terrorist group plotting an attack?

   a. An urban complex of Federal facilities.
   b. A major urban seaport serviced by two interstate highways.
   c. An urban area in need of rehabilitation.
   d. An urban family planning clinic.

8. Currently the most common terrorist threat is

   a. a biological agent.
   b. an explosive device.
   c. a chemical agent.
   d. a nuclear device.

9. Which of the following would be identified as part of a biological incident?

   a. Radiation.
   b. Irritants.
   c. Toxins.
   d. Blood agents.

10. It is estimated that the percentage of terrorist activities involving explosives is about

   a. 80 percent.
   b. 70 percent.
   c. 60 percent.
   d. 50 percent.

Module 2
Incidents and Indicators

Objectives

After completing this Module, you will be able to:

- recognize the chief indicators of a crime scene;
- identify appropriate responder activities and considerations at a crime scene;
- differentiate between the purposes of threat assessment and risk assessment; and
- identify outward warning signs and indicators of the five generic agents.

Assuring a Safe Response to a Potential Crime Scene

There are many similarities between terrorism scene responses and the more common crime scenes to which public safety agencies respond. While law enforcement officers are well versed in crime scene investigations, the majority of fire, EMS, and emergency management personnel are not. It is critical that you understand the special demands placed upon you and your activities when responding to crime scenes.

Any response to an incident other than a natural disaster may be a response to a crime scene. Firefighters may be first responders to arson scenes. EMS personnel may be called upon to administer aid to victims of a violent crime. Hazardous materials teams frequently respond to sites of clandestine dumping or intentional releases of chemicals. At a terrorism crime scene, you will need to co-ordinate closely with other first-responding fire, EMS, and law enforcement personnel to ensure that you and the other responders do not destroy important evidence. Remember that even when the emergency phase of the incident is over, the incident itself has not ended. The incident ends only when there is successful prosecution of the guilty person(s).

As a first responder, you should be aware of warning signs that indicate criminal activity, because some incidents will involve criminal acts.

Avoid Impeding the Investigation

Be sure to co-ordinate your actions with law enforcement operations. Basically, there are three ways to help solve a crime: the confession of the perpetrator, statements provided by witnesses or victims, and incriminating information obtained through physical evidence. Of these, only physical evidence provides incontestable, impartial facts. Only physical evidence can overcome the conflicting and confusing statements of witnesses who, observing the same incident at essentially the same time, nonetheless have different perceptions of what took place.

Physical evidence may be crucial to connect the perpetrator to the scene. The recognition, collection, and preservation of physical evidence may be the only means to identify, and successfully prosecute, those responsible. Keep this in mind when arriving at any potential crime scene.

If you are involved with a terrorist incident as a first responder, you essentially become part of the crime scene. As they do with any material witness, law enforcement personnel likely will interview you at some point. You may be required to testify in court as to what you saw, did, and did not do. Sometimes doing something inappropriate is more detrimental to solving the crime than doing nothing at all. Keep in mind that cases have been lost in court due to the imprudent actions of first responders, whether fire, police, or emergency medical responders.

Scene Considerations

Your response to the scene of a potential terrorist attack could involve entry into a hazardous area. Deadly radioactive, chemical, or biological agents already may have contaminated the atmosphere around the scene. The presence of fires or collapsed building sections may intensify thermal and mechanical risk. You can hope to survive only by entering this area very carefully - by moving cautiously and by wearing the designated personal protective equipment (PPE).

Delaying Entry May Be Wisest

When you suspect hazardous substances or conditions, use only qualified personnel to secure the scene. Hazardous materials teams may have sufficient detection and monitoring equipment to define the hazard. Otherwise, it may be necessary for you to await the arrival of additional resources before you can attempt entry into the hazardous area.

Any appropriate response to the site of a determined mass biological, chemical, or radiological attack may require decontamination of equipment, entry personnel, survivors, and casualties. The emergency decontamination process may be the single most important task that the public safety community can perform during a terrorist incident, but it will certainly tax the abilities of any municipality/community or province. Therefore it makes sense for all communities to preplan for mass decontamination.

Thinking About My Situation...

Does your department have procedures/guidelines for incidents involving mass decontamination?

[ ] Yes [ ] No

Does the jurisdiction's emergency plan have such procedures/guidelines? [ ] Yes [ ] No

Does your department have procedures/guidelines that speak to how you approach, deal with and recover from major crime scenes?

[ ] Yes [ ] No

How would you find out?

_____

_____

_____

_____

Your response to large-scale explosions and fires requires that you pay just as much attention to hazardous conditions as you would at a potential chemical or biological incident. Be aware of the possible presence of a secondary device intended to injure or kill you and other first responders. Often, these secondary devices are referred to as "sucker punch" devices. Bombs produce large-scale trauma due to shock waves, projectiles, and structural collapse. When arriving on the scene of a highly damaged structure, be aware of the structural conditions causing unsafe buildings to collapse, the types of injuries resulting from these incidents, and the specialized precautions you need to take.

Whatever type of threat you respond to, the description that you provide to investigators reconstructing the early minutes of activity at the incident scene can be the key to successful prosecution of the case. At the scene, be aware of persons coming or going on foot or by vehicle. Jot down the license plate numbers, and brief descriptions of those present in order to refresh your memory. Encourage witnesses and bystanders to remain at the scene until investigators have interviewed them. Note any other unusual circumstances.

Your documentation of the incident will prove invaluable in prosecuting the case. Whenever possible, provide photographs and videotape to show the "big picture" of the scene. Include as many details as possible.

Use rough sketches to pinpoint the location of victims and their wounds, as well as the locations of potential evidence. Take notes on what you see and organize them, and provide them to investigators as soon as possible after the response.

Leave Things As You Find Them

At a potential crime scene, it is critical that you disturb the scene as little as possible. If you absolutely must move something, make sure you remember where it was originally, its orientation and condition, and anything else notable about its position and natural state. If possible, photograph the object, using videos or digital images, before you move it. Take notes on any holes, breaks, or scratches that you caused, and pass this information on to the crime scene investigators. Law enforcement officers must be able to differentiate between the results of the crime and what responders might have done to those results.

Following your response, you may have to write an after-action report summarizing your activities and observations during the incident. Be sure to document the report thoroughly using your notes. Remember that your report can be used in court, both in your favor and against you.

Locating the Potential Terrorist--Threat and Risk Target Assessment

In order to determine potential terrorist groups active in your jurisdiction, someone needs to conduct a threat analysis in cooperation with Municipal/Community, Regional, Provincial, and Federal law enforcement officials to identify groups that may pose a threat to your community. This person may be the emergency management co-ordinator or director, or someone else in the community associated with emergency response.

Terrorist groups may include, but are not limited to, the following:

- left-wing radical organizations;
- right-wing racist, anti-authority, survivalist groups;
- suspected terrorist organizations; and
- issue-oriented groups (including extremist animal rights groups, extremist environmental groups, extremist religious groups, anti-authority, anti-abortionists, etc.).

Thinking About My Situation...

Obtain a copy of your municipality/community's emergency plan. Is there a section that deals with hazard or vulnerability assessment?

[ ] Yes [ ] No

Do you find anything in the plan that identifies potentially threatening groups?

[ ] Yes [ ] No

If yes, what are some of the groups named?

_____
_____
_____

If none are named, what steps can you take to identify them?

_____
_____
_____
_____

Once such groups are known (threat assessment) the next step is to identify potential facilities or activities that may become targets of terrorist acts. These facilities may include the following:

- civilian or military government installations;
- industries that are part of the "military-industrial complex," manufacture environmentally sensitive products, operate in politically sensitive countries, or generally represent capitalist endeavors;
- financial institutions that support the above;
- infrastructure components (i.e., transportation, communications, utilities, or energy systems on which the above depend);
  - explosive magazine storage facilities (construction sites, quarries, etc.);
  - sports arenas, parks (theme and others);
  - schools, hospitals, shopping centres; and
  - venues for special events, including such places as synagogues, mosques and temples.

Identifying these potential targets is part of risk assessment.

Thinking About My Situation...

Identify six different facilities in your jurisdiction that might be targets of terrorist activities.

1. _____ 4. _____
2. _____ 5. _____
3. _____ 6. _____

Do you think the occupants of those facilities really think they are at risk? Why or why not?

_____
_____
_____

For each of the facilities you named, use a scale of 1 to 10 to indicate your level of preparedness to respond to a terrorist incident at that facility (1 = low; 10 = high).

Facility 1 ____ Facility 2 ____ Facility 3 ____ Facility 4 ____ Facility 5 Facility 6 ____

Outward Warning Signs and Indicators

At the scene, initial responders need to be on the lookout for the following common warning signs indicating the presence of lethal agents from the five threat categories.

Biological Indicators

Biological incidents will present themselves in two ways. The first could be a community public health emergency, while the second could be a focused response to an incident, such as that involving a toxin.

In the case of a biological incident, there are typically no characteristic signs, because the biological agents are usually odourless and colourless. The onset of symptoms may take days to weeks. Because of the delayed onset of symptoms, the number of victims and the areas affected may be greater due to the migration of infected individuals. In rare instances, symptom onset can be very rapid (as short as four to six hours).

Indicators of a biological event may include any of the following:

- unusual numbers of sick or dying people or animals;
- dissemination of unscheduled and unusual sprays, especially outdoors and/or at night; and
- abandoned spray devices with no distinct odours.

Any number of symptoms may occur. As a first responder, you should consider calling local hospitals to see if they have admitted additional casualties with similar symptoms. Casualties may occur within minutes or hours, or may not occur until many days or weeks after an incident has occurred. The agent used determines the time during which the symptoms appear.

Nuclear/Radiological Indicators

Short of an actual detonation or obvious accident involving radiological materials, there are a couple of ways to be certain that radiation is present. One is to observe the 2000 Emergency Response Guidebook (2000 ERG) placards and labels. The other is to use the monitoring devices that some fire department hazardous materials teams now carry routinely. If the fire department does not have ready access to these instruments arrangements should be made to obtain these various instruments and the trained personnel to operate them. (Note: This assistance should be documented as part of an emergency plan.)

Incendiary Indicators

Multiple fires may indicate the use of accelerants such as gasoline, rags, or other incendiary devices. Remains of incendiary device components, odours of accelerants, unusually heavy burning, or fire volume also are key indicators.

Chemical Indicators

Once released, a nerve agent's outward warning signs are easy to spot. Within minutes, the most significant sign will be rapid onset of similar symptoms in a large group of people. Dermal exposure (clammy skin) and pinpoint pupils (miosis) are the best symptomatic indications of nerve agent use. Because nerve agents are so lethal, mass fatalities without other signs of trauma are common. Other outward signs of nerve agent release include:

- hazardous materials or lab equipment that is not relevant to the occupancy;
- exposed individuals reporting unusual odours or tastes;
- explosions dispersing liquids, mists, or gases;
- explosions seeming only to destroy a package or bomb device;
- unscheduled dissemination of an unusual spray;
- abandoned spray devices;
- numerous dead animals, fish, and birds;
- absence of insect life in a warm climate;
- mass casualties without obvious trauma;
- distinct pattern of casualties and common symptoms; and
- civilian panic in potential target areas, i.e., government buildings, public assemblies, subway systems, etc.

Explosive Indicators

Signs of explosive incidents may be obvious, such as large-scale damage to a building, or may be difficult to detect initially. Blown-out windows and widely scattered debris also serve as indicators.

Victims may exhibit effects of the blast, such as obvious shrapnel-induced trauma, appearance of shock-like symptoms, and/or damage to their eardrums.

Summary

The responsibility of the first responder trained to the awareness level is relatively limited when dealing with the incidents being discussed in this course. A basic consideration is always to help assure the preservation of evidence at the crime scene so as not to impede the investigation or prejudice ensuing litigation. In addition, personal protection is of vital importance and must be maintained. The wisest course of action, although not the easiest, might be to delay entry and await the arrival of appropriately trained and equipped personnel.

Responders in the habit of making quick responses will need to exercise a great deal of self-control in these situations, especially if human life is at stake. Specific steps that can be taken by the first responder at the awareness level are to isolate the scene, deny entry, notify additional resources, and recognize key indicators of a potential terrorist incident.

What I Will Do As Follow-up To This Module...

Refer to your jurisdiction's procedures/guidelines. Do they contain annexes dealing with hazardous materials incidents, specifically B-NICE?

Do you see any serious gaps in the plans? [ ] Yes [ ] No

If yes, identify two practical and achievable steps you might take to help correct the deficiencies you noted.

Step One:

Step Two:

Learning Check

True or False: Circle either T or F.

1. T F At a potential crime scene, it is critical that you disturb the scene as little as possible.

2. T F In responding to an incident other than a natural disaster, first responders could possibly be dealing with a potential crime scene.

3. T F At a potential crime scene, protection of physical evidence is not a concern to first responders.

4. T F The actions of initial responders could in some situations jeopardize the successful prosecution of a crime.

5. T F At a potential crime scene, specific steps that can be taken by the first responder at the awareness level are to isolate the scene, deny entry, and notify additional resources.

Multiple Choice: Circle your answer.

6. Of the following incidents involving first responders, the least likely to be a crime scene is

   a. the fourth of six fires in a four-block area in one night.
   b. emergency responders respond to a structural collapse immediately following an earthquake.
   c. EMS personnel administering first aid to burn victims resulting from a Molotov Cocktail.
   d. emergency responders are faced with large numbers of patients exhibiting symptoms of pesticide poisoning.

7. A first responder at an explosion that damaged the foundation of a tall office building in a financial district should be primarily concerned about

   a. a secondary explosion.
   b. a chemical incident.
   c. mass decontamination.
   d. numerous fatalities.

8. A terrorism incident ends when

   a. you leave the scene.
   b. there is successful prosecution of the terrorist(s).
   c. you finish the incident report.
   d. you have communicated with law enforcement officials.

9. Hazard assessment includes

   a. threat assessment and risk assessment.
   b. threat assessment and damage assessment.

10. A rapid onset of similar non-traumatic symptoms within a large group of people should be sufficient warning that responders are dealing with a potential

   a. incendiary incident.
   b. radiological incident.
   c. chemical incident.
   d. explosives incident.

Module 3
Self-Protection

Objectives

After completing this Module, you will be able to:

- identify characteristics of the six common types of harm;
- contrast the value of different self-protective measures in dealing with the six common types of harm;
- differentiate among the hazards that can occur at various incidents; and
- relate the protective measures of time, distance, and shielding to various incidents.

Self-Protection

As already mentioned in the course, your self-protection as an initial responder is critical so that you can do your job effectively and not become a victim. Your exercise of sound judgment and use of your personal protective equipment (PPE) according to design specifications are your initial steps to protecting yourself. However, there are various protective countermeasures for the six common types of hazards. In this module you will learn how these countermeasures, depending on the type of incident, are useful allies of the first responder.

Recognizing Hazards and Their Physical Effects

You could arrive at a potential terrorist incident and not really know what you're up against. Your first concern must be self-protection. You must recognize the various hazards that may be present at any kind of incident: biological, nuclear, incendiary, chemical, or explosive. You need to remember, too, that a single incident can present a variety of hazards, and exposure can be fatal.

One commonly accepted classification identifies six types of harm you can encounter at an incident: thermal, radiological, asphyxiative, chemical, etiological, and mechanical. The acronym, TRACEM, is an easy way to remember them. Since each has different harmful effects, let's take a brief look at each.

Thermal

Thermal harm is the result of exposure to the extremes of heat and cold. Here we will examine only heat, but cold can be equally harmful.

As you have learned elsewhere, heat travels by one of four methods: conduction, convection, radiation, and direct flame contact.

Radiological

Radiation, as used in this section, refers to nuclear radiation, not radiation as a type of heat transfer. There are three types of nuclear radiation that the first responder should be familiar with: alpha, beta, and gamma. Alpha and beta radiation are found as particles, while gamma radiation is found in the form of rays.

Alpha radiation is the least penetrating of the three, and is not considered dangerous unless alpha-contaminated particles enter the body. Once inside the body, alpha radiation will damage internal organs.

Beta radiation is more penetrating than alpha radiation. Beta-contaminated particles can damage skin tissue, and can harm internal organs if they enter the body.

The use of PPE including SCBA will greatly enhance the emergency responder's safety when dealing with alpha or beta radiation.

Gamma radiation has great penetrating power. Gamma rays are high-energy, ionizing radiation that travel at the speed of light. They can cause skin burns, severely injure internal organs, and have long-term, physiological effects.

Thinking About My Situation...

If your department or jurisdiction is within the evacuation zones of a nuclear generating plant, no doubt there are plans for dealing with a radiological event. You may have received training on how to respond.

You might want to check to see how current the plans are, how recently your jurisdiction has had an exercise, what equipment you have, etc.

Specifically, try to answer these questions.

What procedures/guidelines exist to protect the responders from radiation in case of an accident?

_____

_____

_____

_____

Does the facility transport its spent nuclear fuels through the jurisdiction? How?

_____
_____
_____
_____

Has the jurisdiction ever had a joint exercise with the facility?

[ ] Yes [ ] No

If so, what were some of the lessons learned?

_____
_____
_____
_____

Asphyxiation

Asphyxiants interfere with oxygen flow during normal breathing. There are two types of asphyxiants: simple and chemical.

Simple asphyxiants generally are inert gases that displace the oxygen necessary for breathing, and dilute the oxygen concentration below the level that is useful to the human body.

Chemical asphyxiants are far more serious. Referred to as blood poisons, they are compounds that interrupt the flow of oxygen in the blood or to the tissues. The asphyxiants prevent proper oxygen distribution and starve the body's cells of oxygen.

In all cases, the cells of the body are starved for oxygen. The asphyxiants prevent proper oxygen distribution.

Examples of chemical asphyxiants include hydrogen cyanide (AC), cyanogen chloride (CR), phosgene, carbon monoxide (CO), aniline, and hydrogen sulfide.

Thinking About My Situation...

List some asphyxiants you have encountered in your experiences as a first responder.

_____

_____

_____

_____

Did you or any of your colleagues suffer harmful effects?

[ ] Yes [ ] No

If yes, why?

_____

_____

_____

_____

Chemical

There are two broad types of chemicals used that can cause harm: toxic and corrosive materials. Both of these can exist as solids, liquids, or gases.

Toxic materials produce harmful effects depending on the concentration of the materials and the length of exposure to them. An individual can have chronic or acute exposures to toxic materials. Nerve agents are examples of toxic materials.

Corrosive materials are liquids or solids that cause visible destruction or irreversible alterations in human skin tissue at the site of contact, or, in the case of leakage from its packaging, a liquid that has severe corrosion rate on steel. Sulfuric acid is an example of a corrosive material. Blister agents also behave like corrosives.

Of all the hazards that fall under the umbrella of hazardous materials, chemical hazards are probably the ones you most frequently deal with because they are so common.

Etiological

This type of harm involves exposure to a living microorganism, or its toxin, which causes, or may cause, human disease. Biological agents are the most obvious examples of etiological agents.

Thinking About My Situation...

Once again, refer to your department's or municipality/community's emergency plan.

Is there any provision for dealing with an etiological hazard?

[ ] Yes [ ] No

If there is a plan, what provisions are there for contacting the numerous health and biological services available through the Provincial governments?

_____

_____

_____

_____

If there is no plan, what are some possible implications for you as an emergency responder?

_____

_____

_____

_____

Mechanical

This most common type of harm causes trauma from contact with mechanical or physical hazards. One form of mechanical injury can result from an explosive device, in the form of shrapnel or antipersonnel materials, such as nails, contained in the explosion. Advanced planning and forethought are required to avoid this type of harm. Other examples of mechanical harm include routine slip, trip, and fall hazards that are common to emergency response.

Time, Distance, and Shielding (TDS)--The Keys to Self-Protection

Much of the traditional training in hazardous materials response builds on these three methods, even though often the explicit link is not made.

Time

You should spend the **shortest** amount of time possible in the hazard area and minimize the time of exposure to the hazard. Time is an ally when the hazard can be expected to become gradually less hazardous. Use time to protect yourself at a crime scene. Use techniques such as rapid entries to execute reconnaissance or rescue. Minimizing time spent in the affected area also will reduce the chance of contaminating the crime scene.

Distance

Whenever you can distance yourself from the hazard, you should. It should be an absolute rule always to maintain a safe distance from the hazard area or projected hazard area.

Use of the *Table of Initial Isolation and Protective Action Distances* as found in the 2000 Emergency Response Guidebook (2000 ERG) is advisable. Remember that the greater the distance from the source of harm, the less the exposure. Finally, it is advisable to be upwind and uphill of the source, if at all possible.

Shielding

As it makes good sense for you to let time and distance work in your favour, maintaining significant physical barriers between you and the hazard makes equally good sense. Shielding can take various forms: vehicles, buildings, walls, personal protective equipment (PPE), etc. Use of PPE, including self-contained breathing apparatus (SCBA), will greatly increase your chances of a safe and successful response.

However, you need to remember that no matter how much shielding is available and how safe you think it is, always take full advantage of time and distance.

Implementing the Protective Measures of Time, Distance, and Shielding

What is the appropriate course of action for you to avoid the range of potential hazards at terrorist incidents? The following matrix may be helpful as a guide. It will give you ideas of the options you have.

Incident (B-NICE)	Characteristics	TRACEM Hazards	TDS Measures
Biological	Community public health emergencies, such as a cholera outbreak or an anthrax threat. Focused response, such as in the discovery of a biological agent or its release.	Etiologic	Time: Minimum contact time. Some agents can be fatal very quickly and in small amounts (ricin). Distance: Maximum when unprotected, including distance from those contaminated or exposed casualties. Shielding: Maximum appropriate to the agent, including respiratory protection and splash protection.
Nuclear	Potential for a radiological dispersal device (RDD). Unlikely to experience a fission device.	Primarily radiological. May include thermal, chemical, and mechanical.	Time: Minimum to reduce exposure. Distance: Maximum from hazard. Shielding: Dependent on type of radiation.
Incendiary	Multiple fires, unusual fire volume for structure, evidence of arson.	Primarily thermal, but may include asphyxiative, chemical, and mechanical.	Time: Minimum exposure. Distance: Maximum without PPE. Shielding: Appropriate PPE; avoid potential collapse areas.

Incident (B-NICE)	Characteristics	TRACEM Hazards	TDS Measures
Chemical	May include hazardous materials absorbed, inhaled, ingested, or injected. May include industrial (ammonia, chlorine, gasoline), chemical, or military agents.	Primarily chemical, but may include thermal, asphyxiative, and mechanical.	Time: Minimum exposure time and contact with product. Distance: Maximum from actual chemical remaining; uphill and upwind; away from contaminated areas and casualties, unless properly protected. Shielding: Maximum shielding appropriate to the agent, including appropriate PPE.
Explosive	Multiple hazards are possible with very unique situations.	Primarily mechanical, but may include thermal, chemical, etiological, or even radiological.	Time: Shortest interval, explosions take place in hundredths of seconds. Distance: Maximum. Consult 2000 Emergency Response Guidebook (2000 ERG) Shielding: Maximum. Avoid line of sight and remember potential for secondary devices. Beware of structural collapse.

Recognizing Psychological Effects

As with any mass casualty/fatality incident, the psychological effect on first responders is an issue that must be addressed. Some individuals may be unable to deal with the trauma involved in the incident. In such a case, appropriate psychological assistance, debriefing, and alternate work assignments can be helpful in handling individual needs.

Most emergency response agencies have assistance available to personnel in the areas of critical incident stress and post-traumatic types of incidents.

Summary

When dealing with a potential terrorist incident, you are facing something unusual, something that, perhaps, you never have faced before. This could prove fatal, given the potential complexity of hazards and the specialized response skills needed.

Before making any kind of response, you should evaluate the types of hazards involved and match to them the most appropriate response methods available to you.

What I Will Do As Follow-up To This Module...

Describe one or two practical, achievable steps you will take as a result of studying this Module to help you to be better prepared to deal with one of the incidents described here.

Step One:

_____
_____
_____
_____

Step Two:

_____
_____
_____
_____

How I will accomplish Step One?

How I will accomplish Step Two?

Learning Check

True or False: Circle either T or F.

1. T F The harmful effects of etiologic hazards usually result from interference with oxygen flow during normal breathing.

2. T F Gamma radiation is an asphyxiative hazard.

3. T F Whenever you can distance yourself from a hazard, you should.

4. T F Asphyxiants are liquids or solids that usually cause visible destruction or irreversible alterations in human skin tissue at the site of contact.

Multiple Choice: Circle your answer.

5. The hazards that cause first responders the most injury are:

   a. Thermal.
   b. Chemical.
   c. Biological.
   d. Mechanical.

6. When in a hazardous area, responders should avoid

   a. rushing.
   b. wearing PPE.
   c. shielding.
   d. self-protection.

7. When determining a safe distance from a projected hazard area, responders should refer to the *Table of Initial Isolation and Protection Action Distances* as found in the

   a. SOP.
   b. SOG.
   c. 2000 ERG
   d. OFM.TAFRO:SS

8. PPE provides critical shielding during

   a. situations involving radioactive materials only.
   b. all hazard situations.
   c. situations involving toxic materials only.
   d. most hazard situations.

9. The responder's safest position at an incident scene is

   a. upwind and uphill.
   b. upwind and downhill.
   c. crosswind and uphill.
   d. downwind and downhill.

10. Which of the following is an example of inappropriate shielding?

   a. Vehicles.
   b. Wire fencing.
   c. Walls.
   d. Buildings.

Module 4
Scene Assessment and Control

Objectives
After completing this Module, you will be able to:
- explain the need for an Incident Management System (IMS);
- list the steps or processes traditionally associated with responding to an emergency; and
- name and explain the common steps of the planning process.

Incident Management

Experience has shown that those incidents managed in a systematic way are the most successful at achieving the intended goals. Incident management deals with the Incident Commander (IC) and his/her staff making operational decisions, some strategic, others tactical in nature, and carefully allocating resources to implement them. As a first responder you need to understand the role of the IC as the ultimate decision maker responsible for the outcome of the incident.

The IMS is the framework necessary to manage the resources, personnel, apparatus, and equipment, used to mitigate the incident. Strategic decisions identify the overall approach to the incident, and operational decisions spell out the best use of those resources.

During routine emergencies, most first responders follow a standard approach: performing size-up, choosing a strategy, implementing various tactics, and conducting ongoing evaluation.

In recent years with an increased emphasis on non-routine incidents such as hazardous materials, and now terrorist events, other methods have been developed to address new aspects related to non-routine situations. In these situations it is especially critical to know exactly what steps to take and the sequence in which they must occur because of the presence of hazards other than those traditionally encountered. For example, during a bombing you may find it difficult to determine an appropriate course of action due to the nature or the magnitude of the incident. Furthermore, you may feel extreme pressure to act.

Regardless of the specific process used, responders go through a number of similar steps in dealing with their response. Five common steps include conducting size-up, evaluating the situation, setting incident priorities, estimating potential incident course and harm, and choosing strategic goals and tactical objectives.

Thinking About My Situation...

Have you ever been in a situation where you were, even for a short time, the IC? [ ] Yes [ ] No

If so, did you consciously handle the incident using an IMS or did you operate without one?

_____

_____

_____

What are the risks of operating without an IMS?

_____

_____

_____

_____

Conducting Size-up

Size-up, the rapid mental evaluation of the factors that influence an incident, is the first step in determining a course of action. For first responders it must begin even before the incident in the form of preplanning. The more information you have prior to the incident, the greater the chances of having a safe and successful response.

Evaluating the Situation

Incident factors are dynamic and must be evaluated continually. Therefore, in a sense, size-up continues throughout the incident. In the same way that the military studies its enemy prior to battle and constantly evaluates its battle plans, so should you.

Incident situation refers to the type, the cause, and the status of the incident.

The type of incident refers to whether it is one of the five types of incidents discussed in Module 1 (a chemical attack, an explosion, a fire, etc.). The cause of the incident refers to whether it is an accident, such as a system failure, or something intentional, such as a bombing. The incident status refers to whether the incident is in a somewhat controlled state (static) or is still uncontrolled (dynamic or expanding).

Thinking About My Situation...

Do you agree with this statement? "Continuous evaluation of the situation is something a responder does consciously."

[ ] Yes [ ] No

Do you think injury and fatalities could result from a lack of proper evaluation? Do you know of any instances where this may have occurred?

_____
_____
_____

What might have prevented the injuries?

_____
_____
_____

Setting Incident Priorities

Incident priorities include life safety (for the responders as well as the public); protecting critical systems (such as the infrastructure, including transportation, public services, and communication networks); and incident stabilization.

Estimating Potential Incident Course and Harm

Potential incident course and harm includes a series of predictions based upon the incident situation and available information. The responders estimate the probable course that the incident will take and the probable harm or damage that is likely to occur. For example, if faced with an explosion, you should be concerned about the possible presence of a secondary device that may cause harm to personnel or create additional property damage.

Choosing Strategic Goals and Tactical Objectives

Strategic goals are broad, general statements of the desired outcome. An example of a strategic goal would be "to prevent loss of life for both civilians and responders."

Tactical objectives are specific operations or functions to meet the goal. For example, to meet the strategic goal of preventing loss of life, you should "isolate the hazard area and deny entry into that area."

Tactics are the specific steps and actions taken by the assigned personnel to meet the determined objectives. For example, to accomplish the tactical objective of isolation, you could "position apparatus in such a fashion as to block the area, and cordon off the area with banner tape." Notice that at each level there are more specifics involved. In the case of the tactical methods, using the apparatus and cordoning off the area are only two possible approaches.

Incident Analysis Process

The NFA has adopted for its hazardous materials curriculum an incident analysis process called GEDAPER (developed by David M. Lesak). In doing so, the NFA is saying that the seven steps of GEDAPER provide the responders the needed processes for analyzing and handling a hazardous materials incident safely and prudently. It also is the view of the NFA that this same tool, although not the only one available, can be very helpful in dealing with the range of potential incidents that are the focus of this course.

GEDAPER

There are seven steps to this process:

1. **G**athering information.
2. **E**stimating course and harm.
3. **D**etermining strategic goals.
4. **A**ssessing tactical options and resources.
5. **P**lanning and implementing actions.
6. **E**valuating.
7. **R**eviewing.

Gathering Information

As a first responder, you need to gather as much information about the incident as possible (a first responder in PPE, including positive pressure SCBA, could only use sight and hearing) through observation, using the senses. Given the likelihood of the presence of hazardous materials at a terrorist incident, it would be in your best interest to observe from a distance, using only the senses of sight and hearing. The use of touch, taste, or smell could result in exposure.

Your education, training, and experience will help you evaluate this information before going any further. Today, there are numerous information resources available in hard copy or electronic format. If you

cannot access this information at the scene, contact those who can access it for you. For instance when the term "mass casualty incident" is used to describe an incident scene, you can relate to the situation automatically. The term triggers a mental assessment based on education, training, and experience. This is unavoidable. On top of this there are other layers--perhaps many--of technical information (data) provided by other sources, including texts, computers, preplans, floor plans, etc. For example, if responding to an incident involving hazardous materials (B-NICE), the first responder may consult the *2000 Emergency Response Guidebook (2000 ERG)* for recommendations on initial isolation and protective action distances.

There are other types of information that will assist you as first responder:

- information received from your dispatcher, such as type of incident, incident location, number of reported casualties, etc., that could indicate a possible terrorist incident;
- information obtained during your size-up or from other responders, such as unusual signs and symptoms, presence of dead animals or people, unexplained odours, unusual metal debris, placards or labels, etc. (outward warning signs and detection clues); and
- environmental information, such as time of day or night, location (address, neighborhood, and occupancy), weather (temperature, wind direction, relative humidity), topography (lay of the land, hills, bodies of water), and exposures (people, property, environment).

Regardless of the incident, the first step is to collect all the information possible as quickly as you can before you go any further. Then, once you have made some initial decisions, you need to continue to collect information and reassess it.

Thinking About My Situation...

Recall a recent incident that you have participated in as a first responder, preferably a hazardous materials incident. List a few specific steps of information gathering that you took.

_____

_____

_____

_____

Did you consult any printed or outside sources? If so, name two or three.

_____

_____

_____

Did you refer to any other resources that were not at the scene for additional information using a radio, telephone, or other electronic device? If you did, how helpful was this?

_____

_____

_____

Estimating Course and Harm

Estimating the course of an incident involves using the information you have gathered to make a series of predictions and to assess the potential harm. This involves damage assessment, hazard identification, vulnerability assessment, and risk determination. Damage assessment involves figuring the damage that has already occurred. Hazard identification means determining what product is involved, where it is, what it can do, how much there is, etc. Vulnerability assessment is figuring out who and what is at risk, in other words, all persons and things the hazard may affect. Risk determination involves estimating the probability that the situation might get worse before it is controlled. Initially, strategic goals and tactical options should be based on the most likely situation outcome.

Determining Strategic Goals

Strategic goals are broad, general statements of intent. Always to be included in determining strategic goals are the incident priorities of life safety (responder and civilian), protection of critical systems (anything that is in place for the betterment of the community, such as public utilities and transportation, hospitals, etc.), and incident stabilization.

Assessing Tactical Options and Resources

In order to meet the strategic goals, you need to select appropriate tactical objectives and methods. For instance, if the strategic goal is isolation, then the tactical objectives must include establishing perimeters and operational zones, denying entry into the "hot zone," and removing the public and emergency personnel far from the "hot zone."

Perimeters and zones represent a safety factor, or buffer, against the hazards presented by the incident. The establishment of zones, or perimeters, is critical to protect both first responders and civilians. Denial of entry includes the use of physical barriers, such as tape, rope, barricades, etc. If you have legislative authority, these tasks are within the scope of responsibilities of a first responder trained to the awareness level.

Public protection involves establishing an area of safe refuge for those who are contaminated, thus reducing the chances of secondary contamination. It also involves assisting those individuals who are in harm's way to safety. Doing so will set the stage for decontamination and subsequent medical treatment.

All of these objectives require the use of resources, including personnel and equipment. The level of effort required, coupled with the amount of resources available, will determine if the goals and objectives can be attained. If the resources are adequate, or if other assistance is available, then the next step, planning and implementing actions, becomes possible.

Withdrawal may be required where the situation is too dangerous for intervention. The best course of action may be to evacuate the area, deny entry, and allow the incident to run its course. Continuous reassessment is required to ensure that the most appropriate decisions are made.

Thinking About My Situation...

Do your municipality/community's procedures/guidelines address issues such as establishing operational zones and perimeters (public protection)? If so, what specific issues are addressed that involve the efforts of first responders?

_____

_____

_____

_____

Planning and Implementing Actions

The plan of action is a written document that consolidates all of the operational actions to be taken by various personnel in order to stabilize

the incident. It is important for you to appreciate the purposes of the written plan. It helps pinpoint the exact actions planned.

Your municipality/community's procedures/ guidelines should be linked to the plan of action. They should spell out the functions, roles, and responsibilities of personnel on the incident scene. They should be agreed upon long before the incident, and the staff must be trained in implementing them. The plan of action references procedures/ guidelines; it does not create them.

Another important planning step is to create a "site safety and health plan." Incident management teams should consider such a plan during complex or lengthy incidents. A site safety and health plan is a series of checklists used to manage an incident and to assure the safety of all involved. Like procedures/guidelines, the checklists are developed before the incident and are implemented during the incident.

The site safety and health plan identifies the health and safety hazards faced at the incident scene. It further identifies appropriate PPE, decontamination considerations, EMS concerns, and similar safety issues. When the incident involves chemical or biological hazards it assists in fulfilling employee right-to-know requirement.

The site safety and health plan helps to document the specific actions and safety procedures used. It will assist in documenting whether the chosen plan of action and the specific procedures are followed. In addition, the site safety and health plan tracks activities and performances and assures that personnel safely perform those tasks for which they received appropriate training. Someone trained only to the Awareness Level should not perform tasks specific to the Operations or Technician Levels, for example.

Included in the site safety and health plan are the location and the extent of zones, the nature of the hazards found on the scene, the types of personal protective equipment (PPE) worn by personnel, and the type(s) of decontamination procedures followed.

Thinking About My Situation...

To which level are you trained? _____

Have you ever operated beyond your level of training either of your own volition or because an officer told you to? [ ] Yes [ ] No

Apart from the legal implications, what are the safety implications?

_____

_____

_____

Evaluating

The goal of the evaluation process is to determine whether the plan of action is working as intended. Evaluation will help identify possible errors and allow the responders to correct them. You should monitor and evaluate all incident scenes, terrorist or not. If your plan is failing rapidly, you will need an alternate plan of action that can be implemented quickly and, depending on the available resources, used to solve the problem. It is foolish to stick with a plan that is not working.

Reviewing

The review process involves revisiting and confirming the GEDAPER process. Review occurs either when strategic goals are accomplished or when there is an extended response period and it is not wise to wait until the entire operation has concluded. If the entire process is managed effectively from the start, there should be no problems with the plan of action. Specifically, if the information gathered initially is thorough, comprehensive, and well managed, the estimate of course and harm should be accurate and the strategic goals and tactical objectives chosen also should be appropriate.

If problems are discovered with the plan, then the existing plan should be modified to reflect the appropriate changes, or a new plan should be developed to replace the flawed one. In summary, the plan tells what should be, the evaluation tells what is not, and the review makes the corrections. Ongoing evaluation assures that the plan is working or alerts you that the plan is failing.

Thinking About My Situation...

How often have you been involved in reviewing the incident action plans?

_____

What were some of the benefits of this review process?

_____

_____

_____

Did it make a difference on the final outcome?

_____

_____

_____

Summary

While you may not be faced with being the IC, it should be obvious that your role as a first responder is critical to the management of the incident. Remember that the actions you take and the decisions you make early in the incident will have a dramatic effect on the outcome of the event. One of the first concerns you should address is your safety.

Dependent upon the situation you find upon your arrival, coupled with pre-arrival information such as the incident location and situation as dispatched, you will need to make early decisions that will affect the incident. Always keep in mind the outward warning signs and detection clues mentioned in Module 2. On scene considerations should be similar to your existing response guidelines dealing with hazardous materials. While it would be easy to become overwhelmed, keep in mind the following key points:

- Your safety and that of your fellow personnel is paramount; otherwise you cannot possibly mitigate the incident.
- The initial steps of gaining control of the scene will greatly affect incident management. Simple procedures, such as staging apparatus uphill and upwind, performing isolation, and establishing perimeters, will help immensely. This may be all you can do prior to the arrival of additional resources, but do not minimize its importance.

- You need to be proactive, not reactive. In other words, try to stay a few steps ahead of the current situation to be better prepared for what may occur next.
- Remember also that you are only human and that you can do only a limited number of tasks simultaneously. Although you may be overwhelmed initially, eventually your actions should overcome the seemingly chaotic situation and the incident will be under control.
- Plan to be a part of the solution, not part of the problem.
- Do not hesitate to seek additional assistance.

What I Will Do As Follow-up To This Module...

Describe one or two practical, achievable steps you will take as a result of studying this module to help you to be better prepared to deal with one of the incidents described here.

Step One:

_____
_____
_____
_____

Step Two:

_____
_____
_____
_____

How I will accomplish Step One?

_____
_____
_____
_____

How I will accomplish Step Two?

_____
_____
_____
_____

Learning Check

True or False: Circle either T or F.

1. T F As a first responder, your initial concern should be the safety of others, not yourself.

2. T F All emergency operations must be organized to be successful.

3. T F A system is a collection of unrelated, independent parts designed with no particular purpose.

4. T F Improper emergency scene management can result in loss of scene control, but not greater loss of life or injury.

5. T F Strategic goals are broad general statements of the desired outcome.

Multiple Choice: Circle your answer.

6. A plan that documents specific actions and safety procedures used, tracks activities and performances, and assures that personnel safely perform those tasks for which they received appropriate training, is called

   a. Plan of action.
   b. Procedures/guidelines.
   c. Site safety plan.
   d. Employers Emergency Plan.

7. During the review step in the GEDAPER process, you should

   a. determine the location and extent of zones, the nature of hazards found on the scene, and the types of PPE required.
   b. develop a site safety and operational plan.
   c. revisit and confirm the proceeding steps in the GEDAPER process.
   d. establish the cause and status of the incident.

8. When estimating course and harm during the GEDAPER process, you would

   a. assess damage.
   b. establish perimeters.
   c. determine life safety priorities.
   d. assess resources.

9. When gathering information during the GEDAPER process, you would

   a. develop procedures/guidelines.
   b. collect all the information possible as quickly as you can before you go any further.
   c. determine strategic goals.
   d. select appropriate tactical objectives and methods.

10. If an incident involves hazardous materials, which most terrorist incidents will, Federal regulations require you to create

   a. an evaluation tool.
   b. a site safety plan.
   c. a risk determination.
   d. none of the above.

Module 5
Notification and Co-ordination

Objectives

After completing this Module, you will be able to:

- identify responsibilities stated in an emergency plan (EP), and differentiate between the roles defined in a Municipal/Community and Provincial Emergency Plan;
- differentiate between crisis management and consequence management.
- identify the chain of events for response to a major terrorist incident.

Activating Resources

The first responder plays a critical role in the communication link. It is vitally important that you are able to realize the need for additional resources, and make the appropriate notifications to your communication centre. Your municipality/community should have an emergency plan (EP) in place to deal with all hazards including terrorist incidents. In jurisdictions that use a functional planning approach, hazard-specific appendices can be developed to describe the unique provisions and procedures associated with performing response functions (e.g., direction and control; communications; alert, notification, and warning; emergency public information; evacuation and movement; mass care; health and medical; and resource management, among others) in a situation involving terrorism.

Occasionally, a natural or human made emergency occurs which overwhelms resources and capabilities at the municipal/community level. When such an emergency occurs, it becomes the Province's responsibility to provide assistance to the affected jurisdiction(s), upon request[1]. If the Province's resources and capabilities are not adequate to mitigate the incident, Federal assistance would be requested through Provincial officials. The first step in explaining this process involves your understanding of Municipal/Community, Regional, Provincial, and Federal planning.

What is an EP?

An EP is a document that:

- assigns responsibility to organizations and individuals for carrying out specific actions at projected times and places in an emergency that

[1] Where a County/Regional Emergency Plan exists, that plan should be activated prior to accessing the Province.

exceeds the capability or routine responsibility of any one agency, e.g., the fire department;
- determines applicability, sets forth lines of authority and organizational relationships, and shows how all actions will be co-ordinated;
- describes how people and property will be protected in emergencies;
- identifies personnel, equipment, facilities, supplies, and other resources available--within the jurisdiction or by agreement with other jurisdictions—for use during response and recovery operations; and
- identifies steps to address mitigation concerns during response and recovery activities.

Municipal/Community EPs

In our country's system of emergency management, Municipal/ Community government must act first to attend to the public's emergency needs. Depending on the nature and scope of the emergency, Provincial and Federal assistance may be provided. The Municipal/Community EP focuses on essential measures for protecting the public. These include warning, emergency public information, evacuation, and shelter. Included in your Municipal/Community EP should be a mechanism for emergency responders and managers to notify and activate Provincial resources.

Provincial EPs

The three roles of the Province in an emergency are:

1. they support Municipal/Community jurisdictions whose capabilities are overwhelmed by an emergency;
2. they co-ordinate provincial resources in response to certain emergencies; and
3. they work with the Federal government when Federal assistance is necessary. The Provincial EP is the framework through which Federal assets and resources are accessed.

During a terrorist incident, the RCMP has primary responsibility for crisis management. Local police services are required to notify the RCMP of a terrorist incident in their jurisdiction through the OPP Duty Officer.

Thinking About My Situation...

State whether you agree or disagree with the following statement, and why.

As a first responder trained to the awareness level, it is unlikely I would be involved in a major emergency operation requiring Provincial resources. However, as a member of the Municipal/Community Emergency Management Team, there still is some value in my being familiar with the Provincial Emergency Operations Plan.

_____

_____

_____

_____

Federal and Provincial Resources

Access to Federal resources is co-ordinated through Emergency Management Ontario (EMO). The following section identifies how the Ontario response system works.

Crisis management is the law-enforcement response, and focuses on the criminal aspects of the incident. Specific components of crisis management include activities to anticipate, prevent, and/or resolve a threat or incident; identify, locate, and apprehend the perpetrators; and investigate and gather evidence to support prosecution.

Consequence management is a response to an emergency that consists of government-led co-ordination and implementation of measures intended to mitigate the damage, loss, hardship and suffering caused by acts of terrorism, including measures to restore essential government services, to protect public health and safety, and to provide emergency relief to affected governments, businesses and populations.

Chain of Events

Municipal/community emergency measures co-ordinators can contact Emergency Management Ontario at any time for advice on and liaison during an emergency response, whether imminent or ongoing, regardless of whether an emergency has been declared. However, Provincial and Federal assistance must be officially requested, and all requests must be co-ordinated through Emergency Management Ontario.

Communities Respond First

Elected heads of council (municipalities/communities) are responsible for ensuring emergency management programs exist within their jurisdictions. When emergencies do happen, most are dealt with routinely at the community level by local first response organizations, including police, fire and ambulance services and public works.

If a major emergency occurs in a community, the local head of council should implement the community emergency plan and may declare an emergency. The head of council, supported by local officials who come together as the community control group, then work to ensure a controlled and co-ordinated emergency response.

As part of their arrangements for emergency management, all communities are encouraged to work out mutual aid and assistance agreements with neighbouring communities or regions, so that back-up police, fire and other support may be readily available in an emergency. If additional supplies or equipment are required, or the emergency poses a serious immediate threat to public safety, additional resources to deal with the emergency may be requested from the Province through Emergency Management Ontario.

Emergency Management Ontario will provide advice and assistance to support communities, send staff to the affected area and co-ordinate provincial emergency management activities.

Provincial Assistance

Depending on the nature of the emergency, a provincial minister may be delegated to act on behalf of the Premier. For example, if an emergency has been declared in a community due to flooding, the Minister of Natural Resources would be called upon to implement the ministry emergency plan. Likewise, a serious toxic spill in a community would require the involvement of the Ministry of the Environment.

In very serious or widespread major emergencies, or a nuclear emergency, the Solicitor General, or another Minister, through the co-ordinating role of Emergency Management Ontario, would assume overall control of the situation in accordance with:

- The Provincial Emergency Plan;
- The Provincial Nuclear Emergency Plan, for nuclear emergencies; or
- The Provincial Counter-Terrorism Plan, for emergencies relating to terrorist activities.

Federal Assistance

In the event of a large-scale emergency, the Premier of Ontario may declare a Provincial emergency, although, to date, this has never occurred. If the Province requires assistance from the Federal government, it must be formally requested by Emergency Management Ontario. The Federal government intervenes only when requested, or when the emergency clearly impacts on areas of Federal jurisdiction, such as a war emergency.

To Report Emergencies/Request Provincial Assistance

The Duty Officer at EMO can be contacted on a 24 hours a day, 7 days a week basis, at 1-877-314-3723 or 1-416-314-3723.

Thinking About My Situation...

Contrast the roles you would play as a first responder in crisis management and consequence management. In which area do you think you would have a bigger role as a first responder?

_____

_____

_____

_____

_____

Summary

The first responder must understand what happens when an incident, natural or human made, overwhelms Municipal/ Community and Provincial capabilities and involves a Federal response. Your role in the

notification process is the first link in the communications chain. As soon as possible after you suspect criminal activity or a potential act of terrorism, you should notify the appropriate authorities. For most of you, however, this does not extend beyond your dispatch or communications centre. This will assist in activating available response resources, and increase the likelihood of success.

Given the likely increase in terrorism-related incidents in the U.S. and Canada, your familiarity with Municipal/Community, Provincial, and Federal plans will enable you and your agency to respond more effectively in the event that terrorism strikes in your jurisdiction.

What I Will Do As Follow-up To This Module...

Refer to your Municipal/Community and Provincial EPs. List resources identified in the plan that could help you in a B-NICE incident.

_____

_____

_____

_____

_____

Learning Check

Multiple Choice: Circle your answer.

1. An EP

   a) covers specific actions occurring at projected times and places during an emergency. It does not assign responsibilities to organizations and individuals for implementing these actions.
   b) designates responsibility for setting lines of authority and organizational relationships to any first responder assigned to an incident.
   c) describes alternative approaches for apprehending and convicting would-be terrorists.
   d) identifies personnel, equipment, facilities, supplies, and other resources available for use during response and recovery operations.

2. Crisis management includes activities:

   a) protect public health and safety.
   b) restore essential government services.
   c) provide emergency assistance to affected governments, businesses, and individuals.
   d) anticipate, prevent, and/or resolve a threat or incident.

3. Consequence management:

   a) includes activities to identify, locate, and apprehend the perpetrators.
   b) includes a government-led and co-ordinated response to an emergency.
   c) involves a process of restoring a community to its regular routine.
   d) focuses on criminal aspects of the incident.

4. In Ontario, Federal resources and emergency support functions are accessed:

   a) by the Fire Department.
   b) by the RCMP.
   c) through the Provincial government.
   d) through the Prime Minister.

True or False: Circle either T or F.

5. T F The first responder plays a critical role in the communications link.

6. T F In our country's system of emergency management, Municipal/Community government (first responders) must act first to attend to the public's emergency needs.

7. T F As soon as you suspect criminal activity as a potential act of terrorism, you should notify the appropriate authorities.

8. T F A first responder does not need to be familiar with Municipal/Community emergency plans.

Glossary

Glossary

Acute Exposure An exposure, often intense, over a relatively short period of time.

Alpha Radiation The least penetrating type of nuclear radiation; not considered dangerous unless alpha-contaminated particles enter the body.

Asphyxiation One of the six types of harm (see TRACEM) that can be encountered at a terrorist incident. Asphyxiants interfere with oxygen flow during normal breathing. There are two types of asphyxiants: simple and chemical.

B-NICE The acronym for identifying the five categories of terrorist incidents: **B**iological, **N**uclear, **I**ncendiary, **C**hemical, and **E**xplosives.

Bacteria Single-celled organisms that multiply by cell division and can cause disease in humans, plants, or animals. Examples include anthrax, cholera, plague, tularemia, and Q fever.

Beta Radiation A type of nuclear radiation that is more penetrating than alpha radiation and can damage skin tissue and harm internal organs.

Biological Agent Living organisms, or the materials derived from them, that cause disease in, or harm, humans, animals, or plants, or cause deterioration of material. Biological agents may be found as liquid droplets, aerosols, or dry powders. A biological agent can be adapted and used as a terrorist weapon, such as anthrax, tularemia, cholera, encephalitis, plague, and botulism. There are three different types of biological agents: bacteria, viruses, and toxins.

Biological Incident An event in which a biological agent is used as a terrorist weapon.

Blister Agent A chemical agent, also called a vesicant, which causes severe blistering and burns to eyes, skin, and tissues of the respiratory tract. Exposure is

through liquid or vapor contact. Also referred to as mustard agents; examples include mustard and lewisite.

Blood Agent A chemical agent that interferes with the ability of blood to transport oxygen and causes asphyxiation. These substances injure a person by interfering with cell respiration (the exchange of oxygen and carbon dioxide between blood and tissues). Common examples are hydrogen cyanide and cyanogen chloride.

Chemicals Referred to as blood poisons, these are compounds that interrupt the flow of oxygen in the blood or the tissues in three ways: (1) They react more readily than oxygen with the blood. Carbon monoxide is the best-known example. (2) They liberate the hemoglobin from red blood cells, resulting in a lack of transport for oxygen. Hydrazine is one such asphyxiant. (3) They cause a malfunction in the oxygen-carrying ability of the red blood cells. Benzene and toluene are two of these.

Chemical Agents There are five classes of chemical agents, all of which produce incapacitation, serious injury, or death: (1) nerve agents, (2) blister agents, (3) blood agents, (4) choking agents, and (5) irritating agents. A chemical substance used in military operations is intended to kill, seriously injure, or incapacitate people through its physiological effects.

Chemical Harm One of the six types of harm (see TRACEM) that can be encountered at a terrorist incident. There are two broad types of chemical agents that can cause harm: toxic and corrosive materials.

Chemical Incident An event in which a chemical agent is used as a terrorist weapon.

Choking Agent A chemical agent that causes physical injury to the lungs. In extreme cases, membranes swell and lungs become filled with liquid, which can result in asphyxiation resembling drowning. Death results from lack of oxygen; hence, the victim is "choked." Common examples are chlorine and phosgene.

Chronic	An exposure, often mild, over a long period of time.
Consequence Management	Consequence management is response to an emergency that consists of government-led co-ordination and implementation of measures intended to mitigate the damage, loss, hardship and suffering caused by acts of terrorism, including measures to restore essential government services, to protect public health and safety and to provide emergency relief to affected governments, businesses and populations.
Corrosive Materials	Corrosive materials are liquids or solids that cause visible destruction or irreversible alterations in human skin tissue at the site of contact, or, in the case of leakage from its packaging, a liquid that has severe corrosion rate on steel.
Crisis Management	Crisis management is the law enforcement response, and focuses on the criminal aspects of the incident.
Distance	One of the three components of the time, distance, and shielding (TDS) response; refers to the recommendation that one maintain distance from a hazard if at all possible. Refer to the *2000 Emergency Response Guidebook (2000 ERG)* as an appropriate resource.
Emergency Plan (EP)	An EP is a document that typically (1) assigns responsibility to organizations and individuals for carrying out specific actions at projected times and places in an emergency that exceeds the capability or routine responsibility of any one agency; (2) determines applicability, sets forth lines of authority and organizational relationships, and shows how all actions will be co-ordinated; (3) describes how people and property will be protected in emergencies; (4) identifies personnel, equipment, facilities, supplies, and other resources available for use during response and recovery operations; and (5) identifies steps to address mitigation concerns during response and recovery activities.
Etiological Harm	One of the six types of harm (see TRACEM) that can be encountered at a terrorist incident. Involves

	exposure to a living microorganism, or its toxins, which causes, or may cause, human disease. Biological agents are the most obvious examples of etiological agents.
Explosive	The U. S. Department of Transportation defines explosive as , "a substance fitting into one of these two categories: (1) any substance or article, including a device, designed to function by explosion; or (2) any substance or article, including a device, which, by chemical reaction within itself, can function in a similar manner even if not designed to function by explosion.
Explosive Incident	An event in which an explosives device is used as a terrorist weapon.
GEDAPER	An acronym used to describe an incident analysis process. The steps include (1) **G**athering information, (2) **E**stimating course and harm, (3) **D**etermining strategic goals, (4) **A**ssessing tactical options and resources, (5) **P**lanning and implementing actions, (6) **E**valuating, and (7) **R**eviewing.
Gamma Radiation	Gamma rays are high-energy, ionizing radiation that travel at the speed of light and have great penetrating power. They can cause skin burns, severely injure internal organs, and have long-term, physiological effects.
Incendiary Device	Any mechanical, electrical, or chemical device used intentionally to initiate combustion and start a fire.
Incendiary Incident	An event in which an incendiary device is used as a terrorist weapon.

Irritating Agent	A chemical agent, also known as riot control agents or tear gas, which causes respiratory distress and tearing designed to incapacitate. Common examples include chloropicrin, MACE, tear gas, pepper spray, and dibenzoxazepine.
Mechanical Harm	One of the six types of harm (see TRACEM) that can be encountered at a terrorist incident. Causes trauma from contact with mechanical or physical hazards. One form of mechanical injury can result from an explosive device. Other types include routine slip, trip, and fall hazards.
Municipal Emergency/ Community Plan (EP)	The Municipal/Community EP focuses on essential measures for protecting the public, to include warning, emergency public information, evacuation, and shelter. To be included in a Municipal/ Community EP should be a mechanism for emergency responders and managers to notify and activate Provincial resources.
Municipality/ Community	Municipality/Community means a municipality as defined in the Municipal Act, a First Nations community, or a locality in Northern Ontario that is unincorporated.
Nerve Agent	A substance that interferes with the central nervous system. Exposure is primarily through contact with the liquid (skin and eyes) and secondarily through inhalation of the vapor. Three distinct symptoms associated with nerve agents are pinpoint pupils, an extreme headache, and severe tightness in the chest. Examples of nerve agents are sarin, Soman, tabun, and VX agent.
Nuclear Incident	An event in which a nuclear agent is used as a terrorist weapon. There are two fundamentally different threats in the area of nuclear terrorism: (1) the use, or threatened use, of a nuclear bomb; and (2) the detonation of a conventional explosive incorporating nuclear materials.
PPE	Personal protective equipment.

Plan of Action	A written document that consolidates all of the operational actions to be taken by various personnel in order to stabilize the incident.
Provincial Emergency Plan (EP)	The Provincial Emergency Plan identifies the roles of the Province in an emergency. The three roles of the Province in an emergency are to: 1. support Municipal/Community jurisdictions whose capabilities are overwhelmed by an emergency; 2. co-ordinate provincial resources in response to certain emergencies; and 3. work with the Federal government when Federal assistance is necessary. The Provincial EP is the framework through which Federal assets and resources are accessed.
Radiation	In this self-study program, refers to nuclear radiation, not radiation as a type of heat transfer. There are three types of nuclear radiation: (1) alpha, (2) beta, and (3) gamma. Radiation is the cause of one of the six types of harm (see TRACEM) that can be encountered at a terrorist incident.
Radiological Dispersal Devices (RDD)	A conventional explosive incorporating nuclear materials.
Shielding	One of the three components of TDS; refers to maintaining significant physical barriers between you and the hazard. Examples include vehicles, buildings, walls, and PPE.
Simple Asphyxiant	Generally, an inert gas that displaces the oxygen necessary for breathing, and dilutes the oxygen concentration below the level that is useful for the human body.
Size-up	The rapid mental evaluation of the factors that influence an incident. Size-up is the first step in determining a course of action.
Strategic Goals	Strategic goals are broad, general statements of intent.

2000 ERG — 2000 Emergency Response Guidebook: A guidebook for first responders during the initial phase of a dangerous goods/hazardous materials incident.

TRACEM — The acronym used to identify the six types of harm one may encounter at a terrorist incident: **T**hermal, **R**adioactive, **A**sphyxiation, **C**hemical, **E**tiological, and **M**echanical.

Terrorism — As defined by the FBI, "the unlawful use of force against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in the furtherance of political or social objectives." This definition includes three elements: (1) Terrorist activities are illegal and involve the use of force. (2) The actions are intended to intimidate or coerce. (3) The actions are committed in support of political or social objectives.

Thermal Harm — One of the six types of harm (see TRACEM) that can be encountered at a terrorist incident. Thermal harm is the result of exposure to the extremes of heat and cold.

Time — One of the three components of TDS; refers to the amount of time a responder should be exposed to an incident. It is recommended that one spend the shortest amount of time possible in the hazard area.

Time, Distance, and Shielding (TDS) — Three types of protective measures commonly associated with hazardous materials training.

Toxic Materials — A type of chemical that can cause chemical harm at an incident scene. They produce harmful effects depending on the concentration of the materials and the length of exposure to them. An individual can have chronic or acute exposures to toxic materials.

Toxins — Toxic substances of natural origin produced by an animal, plant, or microbe. They differ from chemical substances in that they are not human

made. Toxins may include botulism, ricin, and mycotoxins.

Vesicants — Chemical agents, also called blister agents, which cause severe burns to eyes, skin, and tissues of the respiratory tract. Also referred to as mustard agents, examples include mustard and lewisite.

Virus — The simplest type of microorganisms, lacking a system for their own metabolism. They depend on living cells to multiply and cannot live long outside of a host. Types of viruses are smallpox, Ebola, Marburg, and Lassa fever.

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Answers to Learning Checks

Answers to Learning Checks

Module 1: Terrorism in Perspective

1. True
2. True
3. False
4. True
5. False
6. True
7. c.
8. b.
9. c.
10. b.

Module 2: Incidents and Indicators

1. True
2. True
3. False
4. True
5. True
6. b.
7. a.
8. b.
9. a.
10. c.

Module 3: Self-Protection

1. False
2. False
3. True
4. False
5. d.
6. a.
7. c.
8. d.
9. a.
10. b.

Module 4: Scene Assessment and Control

1. False
2. True
3. False
4. False
5. True
6. c.
7. c.
8. a.
9. b.
10. b.

Module 5: Notification and Co-ordination

1. d.
2. d.
3. b.
4. c.
5. True
6. True
7. True
8. False

Appendix "A"

Ministry of the Solicitor General | Office of the Fire Marshal

ONTARIO FIRE COLLEGE

APPLICATION FOR CERTIFICATE OF COMPLETION

TERRORISM AWARENESS FOR FIRST RESPONDERS IN ONTARIO: Self-Study

Instructions for Use:

This form is to be submitted for each student learner requesting a Certificate of Completion.

FAX COMPLETED APPLICATION TO
ONTARIO FIRE COLLEGE
OFFICE OF THE REGISTRAR (705) 687 – 4611

PART 1 - APPLICANT INFORMATION *(Please Print)*

SURNAME	INITIAL	FIRST	Rank or Position:	*Please Circle:* MALE OR FEMALE FULL TIME OR VOLUNTEER

Delivery Address:	City or Town	Prov.	Postal Code	Home Telephone #

	Course Code	Course Completion Date
TERRORISM AWARENESS FOR FIRST RESPONDERS IN ONTARIO: Self-Study	**TAFRO-02**	

PART 2 - FIRE DEPARTMENT or OTHER ORGANIZATION DETAILS

Name			
Delivery Address			
City/Town		Province	Postal Code

Fire Department or Other Organization Telephone Number:	Fire Department or Other Organization Fax Number:

PART 3 - APPROVAL

I declare that I have completed the Terrorism Awareness for First Responders in Ontario: Self-Study Course	**SIGNATURE OF APPLICANT:**
I declare that the above-noted student learner has completed the Terrorism Awareness for First Responders in Ontario: Self-Study Course	**SIGNATURE OF MANAGER OR DESIGNATE:**